

a 367 nanometer electro-luminescent light source or a 404 nanometer ultraviolet electro-luminescent light source.--

--FIG. 8 is a schematic a chip that includes porous dye-doped micro-spheres and a silicon wafer substrate with a light source and a detector.--

--FIG. 9 is a schematic a chip that includes porous dye-doped micro-spheres, a silicon wafer substrate, a ultraviolet/blue LED.--

--FIG. 10 is a schematic drawing of a first chip that includes a single porous dye-doped micro-sphere and a silicon wafer substrate with a light source and a detector.--

--FIG. 11 is a schematic drawing of a chip that includes porous dye-doped micro-spheres, a silicon wafer substrate with a light source and a detector.--

--FIG. 12 is a schematic drawing of a sensor that is used with an ultraviolet pump source and a spectrometer.--

--FIG. 13 is a graph of electro-luminescence.--

--FIG. 14 is a diagram of a color chart.--

--FIG. 15 is a graph of spectral output for different colors from the color chart of FIG. 14.--

--FIG. 16 is a graph of intensity versus wavelength.--

--FIG. 17 is a schematic drawing of a second chip that includes a single porous dye-doped micro-sphere and a

silicon wafer substrate with a light source and a detector.--

--FIG. 18 is a schematic drawing of a third chip that includes a single porous dye-doped micro-sphere and a silicon wafer substrate with a light source and a detector.--

--FIG. 19 is a schematic drawing of an array of chip that includes a single porous dye-doped micro-sphere and a silicon wafer substrate with a light source and a detector.--

--FIG. 20 is a flow chart.--

--FIG. 21 is a assay chart.--

--FIG. 22 is a photograph of the array of chip of FIG. 19.--

In the claims:

Cancel claims 1, 2 and 12.

Amend claim 3 as follows:

3. A chip of claim [2] 33 in which [the] said light source is an electro-luminescent material.

Amend claim 4 as follows:

4. A chip of claim [2] 33 in which [the] said light source is an organic [electroluminescent] electro-luminescent material.

Amend claim 5 as follows:

5. A chip of claim [2] 33 in which [the] said light source is an inorganic [electroluminescent] electro-luminescent material.

Amend claim 6 as follows:

6. A chip of claim [2] 33 in which [the] said light source is connected by conductive electrodes.

Amend claim 7 as follows:

7. A chip of claim [2] 33 in which [the] said optical detector is a [semiconducting] semi-conducting material.

Amend claim 8 as follows:

8. A chip of claim [2] 33 in which [the] said optical detector is composed of amorphous silicon.

Amend claim 9 as follows:

9. A chip of claim [2] 33 in which [the] said optical detector is tuned to respond to a specific wavelength range of light.

Amend claim 10 as follows:

10. A chip of claim [2] 33 with multiple optical detectors in which each [detector] of said optical detectors is tuned to a different wavelength range of light.

Amend claim 11 as follows:

11. A chip of claim [2] 33 with multiple optical detectors in which each of said optical detectors [detector] is tuned

to a different wavelength range of light and the output of these optical detectors produces a spectra.

Amend claim 13 as follows:

13. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a bioactive material.

Amend claim 14 as follows:

14. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a protein.

Amend claim 15 as follows:

15. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to an antibody.

Amend claim 16 as follows:

16. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a fluorescence-labeled antibody.

Amend claim 17 as follows:

17. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to an organic dye.

Amend claim 18 as follows:

18. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous gel.

Amend claim 19 as follows:

19. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous gel doped with an organic dye.

Amend claim 20 as follows:

20. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous gel doped with either a protein or an enzyme.

Amend claim 21 as follows:

21. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous gel containing an antibody.

Amend claim 22 as follows:

22. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous gel encapsulating a living cell.

Amend claim 23 as follows:

23. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous silica gel.

Amend claim 24 as follows:

24. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous silica gel doped with an organic dye.

Amend claim 25 as follows:

25. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous silica gel doped with either a protein or an enzyme.

Amend claim 26 as follows:

26. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous silica gel containing an antibody.

Amend claim 27 as follows:

27. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous silica gel encapsulating a living cell.

Amend claim 28 as follows:

28. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous silica gel [microsphere] micro-sphere.

Amend claim 29 as follows:

29. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous silica gel [microsphere] micro-sphere doped with an organic dye.

Amend claim 30 as follows:

30. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous silica gel [microsphere] micro-sphere doped with either a protein or an enzyme.

Amend claim 31 as follows:

31. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous silica gel [microsphere] micro-sphere containing an antibody.

Amend claim 32 as follows:

32. A chip of claim [2] 33 in which each of said sensors [sensor] is coupled to a porous silica gel [microsphere] micro-sphere encapsulating a living cell.

Add claim 33:

33. A chip comprising a plurality of sensors each of which contains at least one light source and at least one optical detector.